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Racial Disparities in Palliative Care for Prostate Cancer

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14. ABSTRACT There is increased interest in management of patients at end of life and effective methods for palliating symptoms are increasingly available. There has been very little research on the use of palliative treatments. Our team has developed the tools/methods for working with SEER-Medicare. We plan to use analytic approaches and methods to explore racial disparities in the use of palliative treatment for prostate cancer. The long-term aim of this study is to have a better understanding of the racial disparities in the receipt of proven or widely accepted palliative treatments.					
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Table of Contents

	<u>Page</u>
Introduction	4
Body.....	4
Key Research Accomplishments.....	7

Palliative Treatment of Advanced Prostate Cancer

PROGRESS REPORT 2012-2013

Principal Investigator: Alfred I. Neugut, M.D., Ph.D.

INTRODUCTION:

New effective treatments have become available for palliative care, but disparities and variability in who receives them may be major issues as these treatments become more effective, but also more expensive and difficult to administer. For example, spinal cord compression was traditionally treated with corticosteroids and radiotherapy (RT), but recent studies have demonstrated that for selected patients surgery with RT would improve the quality of life of these patients. Are all appropriate patients receiving surgery and follow-up RT or are there subgroups that are selectively underserved, especially racial groups? And are these treatments delivered in a timely fashion and to completion? Very little research has focused on such topics in the setting of palliative care.

The long-term aim of this proposal is to have a better understanding of racial disparities in the receipt of proven or widely accepted palliative treatments. To accomplish this, we propose to use a population-based administrative database which we have used extensively in studies of curative therapies, SEER-Medicare database, to evaluate racial disparities and associated factors in the use of palliative treatment in three important palliative settings which are relatively common and have accepted effective therapeutic options.

REPORT:

Task1. Administrative Preparation, Months 1-3:

1. Purchase and upload 2009 update of SEER-Medicare database
2. Recruit new data analyst/SAS programmer
3. Recruit prostate cancer survivor/advocate to serve as consultant
4. Amend IRB approvals.

The SEER-Medicare database update was purchased and uploaded to our servers in early 2010. Beverly Insel, DrPH, an epidemiologist with expertise and experience in SAS programming and epidemiologic data analysis was hired to perform analyses related to this project. When Dr. Insel left the project in 2012, she was replaced by a biostatistician/SAS programmer, Ms. Jinjoo Shim. The CUMC IRB deemed this study exempt from human subjects review.

Task 2. Communication Plan, Months 1-36:

1. Weekly face-to-face meetings among investigators.
2. Semi-annual meetings with prostate cancer survivor consultants.
3. Semi-annual presentations at American Cancer Society Man to Man and Us Too prostate cancer support group meetings.

Weekly meetings to discuss the progress of analysis are held on Tuesdays. This has been ongoing since the initiation of the project. Discussions involve development of inclusion criteria based on variables available in the SEER-Medicare database, refinement of outcome measures, general discussion of analytic methods best suited to each individual study aim, and interpretation of findings.

A presentation was delivered by Dr. Neugut to the Us Too support group at the New York Presbyterian/ Weill Cornell Medical Center and was well received.

Task 3. Model Creation, Months 1-12:

1. Determine eligibility and define samples for three palliative care settings.
2. Create variables to be predictors of three palliative care interventions.
3. Create variables for receipt of three palliative care interventions.
4. Create variables for poor outcomes of palliative care interventions.
5. Data quality control and monitoring.

The specific aims of this study included: examining patients with spinal cord compression from prostate cancer and the use of surgical resection followed by radiation therapy; for patients with ureteral obstruction from prostate cancer metastases, evaluating the placement of stents or percutaneous nephrostomy; and assessment of radiation therapy use among patients with pathologic fractures due to prostate cancer.

Of these three aims, we have successfully analyzed the SEER-Medicare data with respect to the spinal cord compression and ureteral obstruction. We found that in SEER-Medicare the number of pathologic fractures that could be identified in the database with any degree of certainty were so few that it precluded a full investigation. Instead we choose to examine predictors of bisphosphonate use, predictors of the optimal use of bisphosphonates, and use of bisphosphonates in relation to skeletal-related events in prostate, breast, and non-small cell lung cancer. This analysis is scheduled to begin in October 2013.

Task 4. Spinal Cord Compression Study, Months 9-16:

This analysis is complete. The manuscript reporting the results of the spinal cord compression study is in press. See below for abstract.

Task 5. Ureteral Obstruction Study, Months 15-21:

The analysis for this aim is also complete. A paper published in Supportive Care in Cancer in May 2013 reports our findings related to ureteral obstruction. See below for abstract.

Task 6. Pathologic Fracture Study, Months 21-28:

See Task 3 above. Examination of this topic in the SEER-Medicare database was not feasible. We will instead examine the use of bisphosphonates in the advanced stages of three different cancers, including prostate cancer. Analysis will begin shortly.

Task 7. Final Analysis, Manuscript and Report Writing, Months 29-36:

Final analysis and manuscript writing is complete for Tasks 4 & 5, spinal cord compression and ureteral obstruction. We anticipate the amended Task 6 to be completed in 2014.

KEY RESEARCH ACCOMPLISHMENTS:

Spencer BA, Insel BJ, Hershman DL, Benson MC, Neugut AI. **Racial disparities in the use of palliative therapy for ureteral obstruction among elderly patients with advanced prostate cancer.** Supportive Care in Cancer. 2013;21(5):1303-1311

OBJECTIVES:

Palliative issues are an important but understudied issue for patients with advanced cancer. Ureteral obstruction is a complication of advanced prostate cancer, usually relieved with placement of retrograde ureteral stent (RUS) or percutaneous nephrostomy (PCN) to palliate symptoms associated with obstructive uropathy and/or renal failure. We investigated predictors of receipt of RUS and PCN and their association with survival for older advanced prostate cancer patients.

METHODS:

Using the Surveillance, Epidemiology, and End Results-Medicare database, we identified patients aged 65 or older with stage IV (n = 10,848) or recurrent (n = 7,872) prostate cancer. We used multivariable analysis to compare those with ureteral obstruction treated with RUS or PCN to those not treated and to analyze the association between RUS, PCN, and survival.

RESULTS:

Sixteen percent (n = 2,958) of the sample developed ureteral obstruction. Compared to no treatment, African Americans were more likely to undergo placement of PCN [odds ratio 1.48, 95 % confidence intervals (CI) 1.03-2.13] than Whites, but equally likely to receive a stent. Subjects of >80 years were less likely to undergo RUS (ages 80-84, 0.41, 95 % CI 0.27-0.63; ages ≥85, 0.30, 95 % CI 0.16-0.54) compared to patients 65-69 years. Subjects who received a PCN were 55 % more likely to die than those who were untreated. There was no difference in survival among those receiving RUS vs untreated. Nine percent of subjects received RUS or PCN within 30 days of dying.

CONCLUSIONS:

This is the first population-based study to demonstrate a racial disparity in the palliative treatment of advanced prostate cancer. Reasons for disparate care need to be determined so that interventions may be developed.

Spencer BA, Shim JJ, Hershman DL, Zacharia BE, Lim EA, Benson MC, Neugut AI. **Metastatic Epidural Spinal Cord Compression among Elderly Patients with Advanced Prostate Cancer.** Supportive Care in Cancer. *In press.*

Background: A recent randomized trial demonstrated that for metastatic epidural spinal cord compression (MESCC), a complication of advanced prostate cancer, surgical decompression may be more effective than external beam radiation therapy (RT). We investigated predictors of MESCC, its treatment, and its impact on hospital length of stay for patients with advanced prostate cancer.

Methods: We used the SEER-Medicare database to identify patients >65 years with stage IV (n=14,800) prostate cancer. We used polytomous logistic regression to compare those with and without MESCC and those hospitalized for treatment with surgical decompression and/or RT.

Results: MESCC developed in 711 (5%) of patients, among whom 359 (50%) received RT and 107 (15%) underwent surgery +/- RT. Median survival was 10 months. MESCC was more likely among patients who were black (OR 1.75, 95%CI 1.39-2.19 vs. white) and had high-grade tumors (OR 3.01, 95%CI 1.14-7.94), and less likely in those younger; with prior hormonal therapy (OR 0.73, 95%CI 0.62-0.86); or with osteoporosis (OR 0.63, 95%CI 0.47-0.83). Older patients were less likely to undergo either RT or surgery, as were those with ≥ 1 comorbidity. Patients with high-grade tumors were more likely to undergo RT (OR 1.92, 95%CI 1.25-2.96). Those who underwent RT or surgery spent an additional 11 and 29 days, respectively, hospitalized.

Conclusions: We found that black men with metastatic prostate cancer are more likely to develop MESCC than whites. RT was more commonly utilized for treatment than surgery, but the elderly and those with comorbidities were unlikely to receive either treatment.